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# ‘Verb floating’ and VP-ellipsis: towards a movement account of ellipsis licensing\*

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## Abstract

In this paper I propose that ellipsis is licensed by overt movement. Examining variation in VP-ellipsis across English dialects, I show that movement is crucially implicated in whether or not a given element can license ellipsis. I discuss well-known restrictions on VP-ellipsis and present new data that shows that a movement-based account of these restrictions is superior to previous ones. I show that the proposed account can be extended to other cases involving A' movement with empirical benefits, and I conclude by sketching the technical implementation of the theory, arguing that ellipsis is a ‘repair’ operation that prevents a linearization failure following non-deletion of a lower copy. I suggest that types of movement that are unable to spell out lower copies (i.e. A-movement) do not license ellipsis, thus explaining ellipsis licensing in terms of general conditions on copy deletion.

Keywords: ellipsis licensing, VP-ellipsis, sluicing, Copy Theory of Movement, A/A'-distinction

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# 1 Introduction

It is assumed in the literature that an ellipsis site is subject to two separate conditions: recoverability and licensing. An ellipsis site is recoverable if it has identity with a salient antecedent, and most of the work on recoverability has been concerned with clarifying the identity relation that holds between the deleted and antecedent constituents (see e.g. Sag 1976, Chung et al 1995, Merchant 2001, Takahashi & Fox 2006 among many others). Since recoverability has a lot in common with other anaphoric relations in natural language, its analysis has been guided by the principles that have guided the study of anaphora, and indeed some versions of the recoverability theory have tried to reduce ellipsis recovery to general conditions on anaphora (e.g. Hardt 1993, Fiengo & May 1994 among others).

Licensing, on the other hand, is a more mysterious condition, and as such it only holds by definition: a recoverable constituent is licensed if it can be deleted. It is typically assumed that licensing is a syntactic condition, and some have tried to understand ellipsis licensing in the broader context of licensing of other empty categories like traces, PRO and *pro*. Lobeck (1995) is the classic work in this area, in which Lobeck proposes that an ellipsis site is licensed if it is “properly governed” by a “licensing head.” By doing this, Lobeck brings together conditions on ellipsis licensing and conditions on the representation of elements in movement chains.

More recent work on ellipsis licensing in Minimalism has carried over the technology of licensing heads, and in an appropriate update of this technology Merchant (2001) proposes that ellipsis (as PF deletion<sup>1</sup>) is licensed by an E-feature on the licensing head; this feature marks its complement for deletion at PF, thus deriving ellipsis. In a recent formulation of this idea, Aelbrecht (2010) proposes that ellipsis

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<sup>1</sup>I assume throughout that ellipsis is PF deletion of full syntactic structure and not a form of pronominal anaphora or LF copying. See Merchant (2001) for extensive arguments in favour of this approach.

is licensed by an Agree relation between a licensing head (typically T or C, as in Lobeck 1995) and an E-feature on the deleted constituent. One problem with these feature-based accounts is that they adopt the notion of a licensing head in a context where it has been denuded of its wider theoretical justification. The move to Minimalism has effectively rendered the licensing head an ellipsis-specific stipulative category, since notions like “government” have been dispensed with and representational conditions on the distribution of traces have been replaced by derivational constraints on feature-checking (Chomsky 1993 onwards). The elegance of Lobeck’s account has thus been lost in transition, and the modern accounts of ellipsis licensing have been left to look somewhat stipulative in the context of Minimalist inquiry.

In this paper I seek to address this issue head-on by abandoning the stipulative category of the licensing head and developing a partly phonological theory of ellipsis licensing. Reviving a suggestion in Chomsky (1995: 125-126), I propose to derive ellipsis licensing – that is, the ability to delete a recoverable constituent – to general conditions on copy deletion, as understood within the Copy Theory of Movement. I will argue specifically that ellipsis is licensed by non-A-movement (A’-movement and head movement), and that ellipsis is a “repair operation” that deletes the constituent immediately dominated by the target for movement in order to avoid a linearization failure. The proposal thus derives ellipsis licensing from general conditions at the syntax-phonology interface.

A note on terminology: throughout this paper I use the descriptive terminology of “ellipsis licensing” for clarity, but, as will become obvious in section 5, I assume that this term stands in for a more derivational characterization of the process; that is, if I say “ellipsis is licensed,” I mean “there is a legitimate derivation that PF-deletes the constituent at this point.” We say, then, that an element X “licenses ellipsis” if the complement of X can be elided, at least in the situation where

recoverability is also satisfied.

The paper is structured as follows. Section 2 discusses the phenomenon of ‘verb floating’ in dialects of English, and demonstrate that this phenomenon strongly implicates movement in the licensing of VP-ellipsis. Section 3 shows that, assuming a particular model of the auxiliary system, a licensing theory of ellipsis can derive the options in English VPE and offer an explanation for some outstanding issues along the way. Section 4 shows that this theory can be extended to a number of other ellipsis constructions with empirical benefits. Section 5 discusses the implementation of the theory and proposes an explanation for the generalization that only non-A-movement licenses ellipsis. Section 6 sums up.

## 2 ‘Verb floating’ in British English

A core characteristic of verb phrase ellipsis (VPE) across dialects of English<sup>2</sup> is that main verbs cannot license ellipsis unless they are able to raise to T. The standard word order tests in (1) shows that the verb *put* cannot raise to T, and (2) shows that *put* cannot license ellipsis.

- (1) a. \*Morag putn’t a book on the table. *movement over negation*  
b. \*Put Morag a book on the table? *Yes-no questions*  
c. \*Morag put a book on the table, putn’t he? *Tag questions*

- (2) \*Morag put a book on the table, and Rab put, too

This is in contrast with copular (or ‘main verb’) *be*, which is able to raise to T in all environments, and is also able to license ellipsis:

- (3) a. Morag isn’t a fool.

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<sup>2</sup>In what follows, data that is not introduced as being from one dialect or another should be taken as a representation of judgments from across standard dialects, i.e. both American and British English.

- b. Is Morag a fool?
- c. Morag is a fool, isn't she?

(4) Morag is a fool, and Rab is, too.

Let us call this phenomenon where main verbs survive ellipsis *verb floating*.<sup>3</sup> We can see, then, that the raising main verb *be* patterns with the auxiliary verbs with respect to both raising and ellipsis licensing.

A verb does not need to raise as high as T to float, as we can see in (5) that *be* can also float above ellipsis if it appears below modals or auxiliary *have* bearing the relevant affixes. In this respect, main verb *be* correlates with auxiliary forms of *be*, (6). As we might expect, non-raising main verbs like *put* never float in any of these situations, (7).

- (5) a. Morag should be on time, and Rab should be, too.
- b. Morag has been late every night this week, and Rab has been, too.
- c. Morag might have been late last night, and Rab might have been, too.
  
- (6) a. Morag should be fired this week, and Rab should be, too.
- b. Morag has been fired for negligence, and Rab has been, too.
- c. Morag should have been fired for negligence, and Rab should have been, too.
  
- (7) a. \*Morag should put a book on the table, and Rab should put, too.
- b. \*Morag has put a book on the table, and Rab has put, too.
- c. \*Morag should have put a book on the table, and Rab should have put, too.

What this data indicates is that there is a strong correlation between a verb's ability to raise and its ability to float, and that a verb does not need to raise to T (the position which provides us with our tests for the verb's ability to move) to float. At

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<sup>3</sup>I use this term in preference to Goldberg's (2005) term *verb-stranding* in order to avoid confusion with other 'stranding' terms in the literature.

this stage, we might suggest that it is its ability to raise that allows a verb to float and license ellipsis: specifically, if a verb can raise, it will raise to some position in the inflectional layer and will thus float above the ellipsis site.

One might contend that all this data demonstrates is that auxiliary verbs license ellipsis; in the cases where *be* floats, it is allowed to do so because it can be analysed as its auxiliary verb homophone.<sup>4</sup> However, we can rule out this alternative by considering another, less well-known floating phenomenon. (8) shows that variation across dialects in the availability of floating possessive *have* also tracks variation in the availability of raising: possessive *have* raises to T and floats in British English (BrE), but it does not in American English (AmE). (Cliticization to the subject, given in (8a), provides an additional test to those above.)

- (8) a. I've a copy of *Lolita* you can borrow.      OKBrE, \*AmE  
      b. I haven't any money left.      OKBrE, \*AmE  
      c. Have you any money left?      %BrE,<sup>5</sup> \*AmE  
      d. Rab has a copy of *Lolita*, hasn't he?      OKBrE, \*AmE
- (9) a. Rab has a copy of *Lolita*, and Morag has, too.      OKBrE, \*AmE  
      b. Rab should have a copy of *Lolita*, and Morag should have, too.      OKBrE, \*AmE  
      c. Q: Do you think Martin Amis had a copy of *Lolita* when he wrote *Money*?  
      A: I think he must have had.      OKBrE, \*AmE

If floating was made available by an auxiliary homophone, we would not be able to explain the non-availability of floating possessive *have* in AmE, nor its correlation across the dialects with the ability to raise.

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<sup>4</sup>Another way to frame this objection would be to say that main verb *be* actually *is* an auxiliary verb in some sense, and that it is this 'being an auxiliary verb' quality that allows a verb to license ellipsis. Section 3.3 provides evidence against such an analysis.

<sup>5</sup>Raising of *have* to C seems to be less widely available in yes-no questions than in tag questions, but many speakers of British dialects still allow it. See Radford (1997: 235-240).

This point is demonstrated further by evidence from *eat-have*, a main verb form of *have* that is synonymous with ‘to eat’ or ‘to consume:’

- (10) I have steak for dinner on special occasions.

In both American and British English, *eat-have* does not raise,<sup>6</sup> (11). This verb also does not float, (12), contrasting strikingly with possessive *have*.

- (11) a. \*I’ve steak for dinner on special occasions.  
 b. \*I haven’t steak for dinner on special occasions.  
 c. \*Has Rab steak for dinner on special occasions?  
 d. \*Rab has steak for dinner on special occasions, hasn’t he?
- (12) a. \*I have steak for dinner on special occasions, and Rab has, too.  
 b. \*I will have steak for dinner on special occasions, and Rab will have, too.  
 c. \*Nabokov would have had steak for dinner on special occasions, but Perec wouldn’t have had.

We can see, then, that floating has nothing to do with auxiliary homophony; rather, it is crucially dependent upon verb raising, in that only verbs that can raise are able to float.

How, then, do we explain this correlation between raising and floating? One possible explanation is that the verbs that float happen to raise out of a designated ellipsis site, whereas the other don’t. This is how we would handle floating if we were to adopt the licensing theory of Aelbrecht (2010). In Aelbrecht’s system, ellipsis is licensed by an Agree relation between an E-feature on little *v* and the licensing head *T* (the licensing head does not need to occur at the edge of the ellipsis). The ellipsis site is the complement of *vP*, and an element can escape that site if it raises before or as *T* is merged. Alternatively, we could propose that these

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<sup>6</sup>*Eat-have*’s inability to raise may be related to the fact that it has a full argument structure, unlike the other raising verbs in English.



verbs are able to float because they license ellipsis by raising; that is, when a verb raises, the complement of its target position can elide.

With respect to the issue of floating alone, the latter approach is less theoretically burdensome, since it does not require the notion of the licensing head or the stipulations that go with it. This isn't enough to decide between the two, however. In what follows, I will tease apart the two proposals by looking at how to derive the full VPE paradigm. We will see that the movement approach can deal with some issues which the Agree approach can only deal with by admitting further stipulation, and we will see that the movement approach makes specific empirical predictions that cannot be accounted for in the Agree model without significant alteration.

### 3 Options in VPE

In this section I show how the options in English VPE can be derived in the movement account, given a particular model of the auxiliary system (see Omaki 2007 for a similar model).<sup>7</sup> I show how this account can derive the basic paradigm, and discuss an additional benefit of this system with regard to a curious restriction on licensing with modals. I then discuss optionality in the size of VPE sites and how it indicates the superiority of the movement account to the Agree account. I conclude the section by overviewing the potential problems posed by infinitival VPE and negation.

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<sup>7</sup>It should be noted that a broadly similar system would be required for Aelbrecht's (2010) system to explain the floating data above: her system requires that floating verbs move out of the ellipsis site, so it would also require this kind of movement to affixes.

### 3.1 Movement to affixes in the inflectional layer: the basic paradigm

It is typically assumed in the literature that auxiliaries start out low in the clausal structure and raise into positions in the inflectional layer (Emonds 1978, Pollock 1989, Chomsky 1993, Bobaljik 1995 and many others). Evidence for this comes from negation and adverb placement, as discussed in Pollock’s seminal work and much work since. Roberts (1998) argues that deontic modals also raise from lower positions in the structure, since they are able to scope under negation even when they appear above them; Roberts argues that this obtains after reconstruction,<sup>8</sup> which necessitates a base position lower in the structure for these modals.

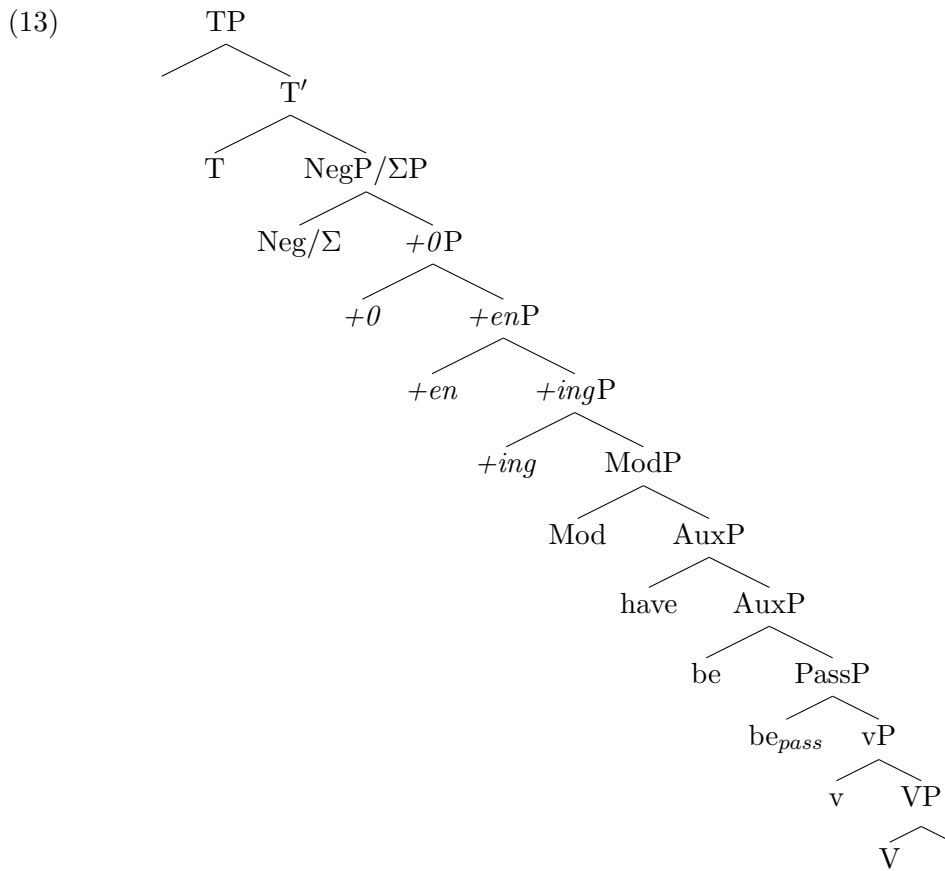
Here I assume a strictly non-lexicalist model of the syntax-morphology interface (i.e. Distributed Morphology, Halle & Marantz 1993, Embick & Marantz 2008). Such models propose that bound morphemes like *T* are the heads of projections, so it is natural to assume that the other bound morphemes in the affix hopping system, *+0*, *+en*, and *+ing*, also head projections in the inflectional layer (see for example Lasnik 2000 for a similar proposal). Thus, the operations involved in ensuring *T* is affixed to a verb will also be involved with the other inflectional heads: that is, verbs will either move to head-adjoin to these affixal heads in the overt syntax (as with raising verbs), or they will undergo some sort of post-syntactic combination with them in morphology (as with non-raising main verbs). The floating phenomena provide us with evidence for some sort of movement to these projections, since it shows that verbs that bear the particular lower affixes, and which also generally undergo movement to bear the higher affix in *T*, are capable of floating. Without the assumption that raising verbs undergo overt movement to bear the lower affixes,

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<sup>8</sup> The theory proposed here assumes that head movement is not PF-movement, as is claimed by some in the literature (see e.g. Boeckx & Stjepanović 2001), but rather movement within the narrow syntax. See Matushansky (2006) and Lechner (2007) for arguments for this analysis.

we could not explain how copular *be* and *have* survive VPE when they don't move as high as T.<sup>9</sup>

We may assume, then, that verbs that appear in the lower positions in the inflectional layer get to these positions by movement from base-positions further down: ModP, AuxP, VP in the case of copular *be* and *have*. In (13) I present a model of this system, where the affix projections are ordered to derive the affix hopping system in English:



<sup>9</sup> This is not strictly true. One explanation of the correlation between raising and ellipsis evidenced by the floating phenomena that I have not discussed is that the morphosyntactic feature that makes a verb a ‘raising verb’ always appears alongside the feature that allows a verb to license ellipsis of its complement. In such a system, a verb could license ellipsis in its complement even if it did not raise; thus, floating could involve ellipsis below base-generated auxiliaries and main verbs, perhaps within a lexicalist model of affixation. I ignore this option here for expository reasons only, but I believe it can be ruled out: see footnotes 18 and 22.

We assume that the affixal projections (*+ingP* etc) are always projected in the finite clause. I assume, following Thoms (2010a) (which is similar in some respects to the proposal in Embick and Noyer 2001), that *do*-support is little *v*-raising, and that little *v* patterns with the other auxiliaries with respect to raising. Little *v* raises to T if it is required to check its *v*-feature, but it only ever spells out as *do* if it is separated from V; I discuss the evidence and analysis in section 3.2 below.

The raising verbs (the auxiliaries, main verb *be* and British possessive *have*) bear strong T-features that must be checked by the affixes.<sup>10</sup> Feature-checking must be done under strict adjacency, which obtains between a verbal head and an affixal head either in the case of a head-head configuration (head-head adjunction after overt movement of the verb to the affix, or a Spec-head relation if we follow Matushansky 2006 in assuming head movement is movement to a specifier), or when there are no intervening non-empty<sup>11</sup> projections between them. In Morphology the unaffixed inflection morphemes are lowered onto the main verb successively, and the one on the outside (i.e. the last one to merge with the verb, the highest affix) is the one that is spelled out on the verb; this is T in the case where there are no other intervening projections or auxiliaries.

We derive the affix hopping system in the following manner:

- (14) a. T has a strong *v*-feature that is checked by all of the raising verbs.<sup>12</sup>  
 b. The T-feature on auxiliary *have* is valued only by *+θ*, so *have* always moves to *+θP* to combine with that affix.  
 c. Whenever a verb moves to one of the inflectional affixes, and T's *v*-feature remains unchecked above it, the verb must move to T via the intervening affixes, absorbing them as it goes. Thus *have* will raise further to T in the absence of a modal.

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<sup>10</sup>Here I assume, following Omaki (2007) and Lasnik (1995), that strong features can be on the attractor or attractee.

<sup>11</sup>Empty projections would be traces/deleted copies. Thus in the system in (13), the traces of verb movement would not intervene, but the affixal projections, negation and  $\Sigma P$  would.

<sup>12</sup>This has the same import as saying that T is affixal, as Lasnik (2000) and others do.

- d. The T-feature on *be* is valued by *+en*, so *be* always moves to *+enP* to combine with that affix. It will move further to *+0* and T in the absence of other elements in those positions.
- e. The T-feature on passive *be* is valued by all of the affixes, and it is trivially valued in situ by *+ing*. It will, however, move through the other affixes all the way to T if it can. The T-feature on the raising main verbs is the same.
- f. Passive *be* selects for a ParticipleP projection that also spells out as *+en*; this is affixed onto the passivized verb in Morphology.<sup>13</sup>

To demonstrate how this system works, consider the following sample derivations for an instructive set of cases (which are simplified to concentrate on the verbal system):<sup>14</sup>

(15) Rab should leave.

- a. *Should* moves to T to check T's v-feature.<sup>15</sup>
- b. At morphology, *leave* combines with v, *+ing* then *+en* then *+0* above it and is spelled out as the zero form *leave*.<sup>16</sup>

(16) Rab is leaving.

- a. *Be* moves to *+en* to check its T-feature, then continues to move up via *+0* to T, checking T's v-feature.
- b. At morphology, *leave* combines with v and *+ing* above it and is spelled out as *leaving*.

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<sup>13</sup>I do not explore this issue further to avoid getting into the unwieldy issue of how the passive is derived. We might speculate that this ParticipleP is the passive equivalent of vP (v\*P in Chomsky's terms). Note that I do not include ParticipleP in the tree diagram, to avoid confusion.

<sup>14</sup>As noted by an anonymous reviewer, the present system involves a significant number of movements that violate the Head Movement Constraint (HMC, Travis 1984). I assume following Roberts (2010) and others that the HMC has no independent status in the theory, and that HMC-like effects are subsumed under (feature-)Relativized Minimality. Thus a modal head can move over the lower affix head because it is attracted by a higher head X and no other intervening head bearing the same attracting feature is closer.

<sup>15</sup>Note that this means the modals do not necessarily bear T-features.

<sup>16</sup>This assumes that V-to-v movement is not overt in English; this seems to be assumed by Embick and Noyer (2001) and others, although there is variation in the analysis in the literature. The alternative analysis is not entirely incompatible with the present proposal, however.

- (17) Rab should be leaving.
- a. *Should* moves to T to check T's v-feature.
  - b. *Be* moves to *+en* to check its own T-feature, then continues to move up to *+0*.
  - c. At morphology, *leave* combines with v and *+ing* above it and is spelled out as *leaving*.
- (18) Rab is being silly.
- a. Auxiliary *be* moves to *en* to check its T-feature then proceeds to T via *+0* to check T's v-feature.
  - b. Copular *be* checks its T-feature in-situ as it is immediately adjacent to *+ing*. The two combine at morphology.
- (19) Rab should have been punished.
- a. *Should* moves to T to check T's v-feature.
  - b. *Have* moves to *+0* to check its own T-feature.
  - c. Copular *be* moves to *+en* to check its T-feature.
  - d. *Punish* merges with the head of ParticipleP (equivalent to the *+en* morpheme) in morphology and spells out as *punished*.

This derives the basic paradigm for affix hopping. The most important thing about this system is that strict adjacency between an affix and one of the verbal heads only obtains after movement in the case of T, *+0* and *+en*; however, with *+ing* adjacency necessarily obtains *without* movement, because *+ing* is the lowest projection in the affixation system. Given general economy conditions, we may assume that, if a verb does not need to move, it cannot move. Thus, all raising verbs will raise from their base positions if they are to bear the T, *+0* and *+en* affixes, but they will not

move if they bear the *+ing* affix; rather, the verbal head and *+ing* will combine by *m-merger* in Morphology (Marantz 1988, Matushansky 2006).

If we assume this model of the auxiliary system, it follows that the options in English VPE correlate precisely with the presence of a moved constituent at the edge of the ellipsis, for auxiliaries and floated verbs.

**Movement of verb to T: ellipsis possible**

- (20) a. Rab should arrive on time, and Morag should, too.  
 b. Rab has arrived on time, and Morag has, too.  
 c. Rab is running late, and Morag is, too.  
 d. Rab was expected to arrive at 6pm, and Morag was, too.  
 e. Rab is late, and Morag is, too.  
 f. Rab has a slow watch, and Morag has, too. *OK BrE, \*AmE*

**Movement of verb to *+0*: ellipsis possible**

- (21) a. Rab will have arrived by 6pm, and Morag will have, too.  
 b. Rab will be running late, and Morag will be, too.  
 c. Rab will be expected to arrive on time, and Morag will be, too.  
 d. Rab will be late, and Morag will be, too.  
 e. Rab should have a copy of *Lolita*, and Morag should have, too. *OK BrE, \*AmE*

**Movement of verb to *+en*: ellipsis possible**

- (22) a. Rab has been watching television, and Morag has been, too.  
 b. Rab would have been watching television at that time, and Morag would have been, too.  
 c. Rab would have been fired for such poor timekeeping, and Morag would have been, too.  
 d. Rab would have been a fine candidate, and Morag would have been, too.  
 e. Rab would have had a copy of *Lolita* at home, and Morag would have had, too. *OK BrE, \*AmE*

**Non-movement (but m-merger) of verb to bear *+ing*: NO ELLIPSIS**

- (23) a. \*Rab is being bribed by a gang, and Morag is being, too.  
 b. \*Rab is being shrewd, and Morag is being, too.  
 c. \*Rab must be being bribed, and Morag must be being, too.

The fact that auxiliaries bearing the *-ing* affix cannot license ellipsis (in a head-head licensing account) was observed by Lobeck (1995) and Johnson (2001). This was dealt with by the stipulation that non-finite auxiliaries (but not infinitival *to*<sup>17</sup>) do not license ellipsis.<sup>18</sup> However, in the present account, where ellipsis is licensed by movement, this restriction follows naturally from the ordering of the affixes in the inflectional layer (as reflected by their appearance on the verbs in the affix hopping system).

### 3.2 *Do*-support as v-raising

Some details need to be given on the analysis of *do*-support adopted here from Thoms (2010a), as it is crucial to the analysis above and to VP-ellipsis in general. It is well-known that *do*-support appears in ellipsis contexts without other auxiliaries:

- (24) Rab bribed Bill, and Morag did, too.

The classic analysis of *do*-support is that it involves Last Resort insertion of the dummy verb in T when there is no other element that can bear the affix (Chomsky 1957, Pollock 1989, Lasnik 2000). If the insertion analysis was correct, then examples like (24) would present a *prima facie* counter-example to the present account, since *do* does not move to its surface position and should not license ellipsis.

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<sup>17</sup>See section 3.5.1 for discussion of the issues regarding infinitival VPE.

<sup>18</sup> This data presents evidence against the account of licensing mentioned in footnote 9. If simply bearing a feature that marks potential to move is enough to allow an element to license ellipsis, we would expect that the examples (23) would be acceptable, since we know that passive *be* is normally able to move to higher positions. The fact revealed here is that when it does not actually express its potential to move, it does not license ellipsis.



However, the Last Resort account of *do*-support is particularly suspicious under Minimalist assumptions, since it involves a violation of Chomsky’s (2004) Inclusiveness condition (see Haddican 2007a). Furthermore, it is known that the Last Resort account is empirically flawed, since a number of examples of *do*-insertion that are not Last Resort can be found from dialects of English (see Schütze 2004). One such example is ‘British *do*,’ a construction found in British dialects of English where a dummy *do* optionally appears below either a modal or auxiliary *have* in VP-ellipsis:

- (25) a. Rab might bribe Bill, and Morag might do, too.  
b. Rab might have bribed Bill, and Morag might have done, too.

While Haddican (2007b) suggests that British *do* is a proform like *do so*, in Thoms (2010a) I provide evidence against this analysis and show that arguments for keeping British *do* and *do*-support separate are not compelling. With this and other evidence in mind, I propose (partly inspired by the analysis of Embick & Noyer 2001) that *do*-support is raising of little *v*, and that the British *do* construction is another example of floating, specifically *v*-floating.

As stated above, *v* raises to T to check T’s *v*-feature when required, that is, when there are no other auxiliaries above it. Crucially, *v* only spells out as *do* if it is not adjacent to V in Morphology. This happens in all the crucial cases which are presented below and schematized (simplifying somewhat) in the (b) examples: when negation or  $\Sigma P$  intervenes as in (26), (ii) when *v* moves further to C and the DP subject intervenes as in (27) (note that this doesn’t happen with *wh*-subjects, since the subject is in Spec,CP); (iii) when the VP is topicalized, as in (28), and (iv) when the VP is elided, as in (24) above, schematized as (29).

- (26) a. Rab did not leave.  
b.  $[_{TP} \text{ subj } [_{T'} T+v [_{NegP} \text{ Neg } [_{vP} t_v [_{VP} V]]]]]$

- (27) a. What did Rab say?

b.  $[_{CP} \text{ Wh } [_{C'} \text{ C+v+T } [_{TP} \text{ subj } [_{T'} \text{ t}_{T+v} [_{vP} \text{ t}_v [_{VP} \text{ V t}_{wh}]]]]]]]$

(28) a. Rab said he would win the race, and win the race he did.

b.  $[_{CP} \text{ VP } [_{TP} \text{ subj } [_{T'} \text{ T+v } [_{vP} \text{ t}_{VP}]]]]]$

(29)  $[_{TP} \text{ subj } [_{T'} \text{ T+v } [_{vP} \text{ t}_v [_{VP} \text{ V obj}]]]]]$

British *do* is explained by positing that *v* can also bear a T-feature like that borne by the other auxiliaries: if this were the case, *v* would move to *+θ* in (25a), and to *+en* in (25b), with the complement of the moved *v* eliding in both cases. Importantly, British *do* patterns with the other verbs in disallowing ellipsis in the *ing* form.<sup>19</sup>

(30) \*Rab is throwing a TV out the window, and Morag is doing, too.

This is not expected if British *do* is a proform, as *do so* can readily occur in the *ing* form. The explanation for this data is the same for the cases in (23) above. Note also that British *do* also patterns with regular auxiliaries and against *do so* with respect to its behaviour in VP displacement. (31) shows that VP-displacement can strand multiple auxiliaries, and (32) shows that it can also strand British *do*; however this is clearly disallowed with *do so*, as shown by (33):

(31) Rab wasn't expecting to be chosen as striker, and chosen as striker he certainly won't be.

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<sup>19</sup>Baltin (2007) provides data that reports that British *do* can sometimes license ellipsis in the *doing* form. However, I disagreed strongly with the reported judgments, and every speaker I consulted (including speakers of various British dialects) felt the same, unanimously judging the data ungrammatical. I surmised that speakers who accept *+ing* forms of *do* would also allow for *+ing* forms of *be* in similar constructions; this is supported by the fact that the contexts that seem to allow for quasi-acceptable *being* forms would also allow for quasi-acceptable *doing* forms:

i. A: Why don't you sit quietly? (Quirk et al 1985: 875; judgments from Thoms 2010a)  
 B: ??/?I AM doing!

ii. A: Why won't you be quiet? (Thoms 2010a)  
 B: ??/?I AM being!

(32) I expect Rab to win the race, and win the race he will do.

(33) \*I expect Rab to win the race, and win the race he will do so.

Again this is expected if British *do* is a spellout of little *v* in the inflectional layer when it is separated from *V*.

This view of *do*-support thus provides us with a unified account of verb-floating, and it allows us to maintain that VPE is licensed by movement even in the cases with *do*-support (see Thoms 2010a for the specifics of this account of *do*). In Thoms (2010a), I argue that this analysis also allows us to explain the idiosyncratic properties of British *do*, and to dispense with the troublesome Last Resort analysis of standard *do*-support. In the next section, we will see that this analysis of *do* also allows us to understand another curious gap in the VPE paradigm.

### 3.3 An interesting gap: epistemic *must*

A benefit of the movement account of licensing in VPE is that it also explains another gap in the VPE paradigm that has been data reported in the literature: the restriction on ellipsis with epistemic modals as licensors (Ross 1969a, Gergel 2007).<sup>20</sup>

(34) Bob must wash his car every day, and Peter must, too. \* *on epistemic reading*  
(Gergel 2007)

It is often claimed that epistemic modals are merged higher in the tree than deontic and root modals (Cinque 1999). Similarly, Roberts (1998) posits that the modals that move to *T* from a lower position are those that scope under negation. He also points out that epistemics like *must* do not scope under negation, and thus

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<sup>20</sup>Note that the epistemic/deontic contrast is also attested in the case of Modal Complement Ellipsis in Dutch, Italian and French (Aelbrecht 2010).

surmises that such modals are base-generated in T. If we adopt Roberts’ analysis, (34) follows from the present theory:<sup>21</sup> epistemic *must* has not raised to T, so it does not license ellipsis.<sup>22</sup>

This account makes a clear prediction: if other verbs follow epistemic *must*, and these verbs have raised to their surface positions, ellipsis should be possible in the complement of these additional verbs. This prediction is borne out by the following examples, which are all acceptable on the epistemic reading:

(35) Bob must have washed his car every day, and Peter must have, too. *OK on epistemic reading*

(36) Bob must be late for work, and Peter must be, too. *OK on epistemic reading*

(37) Bob must have been fired ten times last year, and Peter must have been, too. *OK on epistemic reading.*

These examples are not in minimal contrast with (34), however, as the meanings of (35)-(37) strongly favour the epistemic readings and can bias these sensitive judgments. However, (34) does form a minimal pair with the following example of the ‘British *do*’ construction (since *do* here makes no contribution to meaning):

(38) Bob must wash his car every day, and Peter must do, too.

As mentioned above, in Thoms (2010a) I argue that the *do* in these constructions is another form of verb-floating, having moved to its surface position from within the vP; specifically, it is a spellout of little *v*. This means that British *do* is a potential

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<sup>21</sup>A reviewer notes (citing Gergel 2009) that not all epistemic modals fail to license ellipsis; for example, epistemic *should* is reported to be able to license ellipsis. We might account for this variation by looking for evidence that separates the two types of epistemic modal. One instructive difference is that *should*, unlike *must*, inflects for tense; given this, we might assume that this verb is generated lower and moved to T, but that the non-inflecting modals like *must* are inserted in some position above T (as proposed by Schütze 2004) and do not move further. This is a subject that warrants further investigation.

<sup>22</sup> This data provides further evidence against the account mentioned in footnote 9, since we know that epistemic *must* does in fact possess the ability to raise, as it can undergo T-to-C movement in questions.

licensor within the present account, and we would predict that (38) should be OK with the epistemic reading. This is indeed the case: all speakers who agree with the judgment reported in (34) agree that the epistemic reading is perfectly available for (38), and the overwhelming majority of those who find the judgments unclear report that the epistemic reading is more readily available in (38) than (34).

A Lobeck-style approach could explain this licensing restriction by stipulating that epistemic modals do not license ellipsis; since this system involves licensing in a local configuration, the data in (35)-(37) would be unproblematic. However, it is not clear how an Agree model like Aelbrecht's (2010) would do this: if licensing is done by the head in T, we would stipulate that epistemic modals are not licensors and cannot agree with the E-feature for VPE; however, we would then be at a loss to explain (35)-(37), since in these situations the head in T must be able to value the E-feature that produces ellipsis. Thus the evidence from epistemic *must* indicates that the movement theory of ellipsis is empirically superior to the Agree account in the case of English VPE. Nevertheless, I do not take this particular phenomenon to be decisive, as the data is somewhat variable and Roberts' assumptions about the base-generation of epistemic modals might be called into question. The data in the following section, on the other hand, is more important, and I believe it shows decisively that the movement theory is to be preferred to the Agree theory.

### 3.4 Optionality in VPE

A major benefit of the movement theory of ellipsis (one shared by Lobeck's government approach) is that it can account for optionality in the size of VPE deletion sites. Although it is typically referred to as 'verb phrase ellipsis,' it is well known that the ellipsis process in the finite clausal domain in English can target constituents of varying sizes, so long as there remains an auxiliary in T.

- (39) a. Rab might have been fired, and Morag might (have (been)), too.  
 b. Rab should be fired, and Morag should (be), too.  
 c. Rab will be late, and Morag will (be), too.  
 d. Rab might have finished the essay by now, but Morag won't (have).  
 e. Rab might have a copy of *Lolita*, and Morag might (have), too. *BrE*
- (40) a. Rab has been fired, and Morag has (been), too.  
 b. Rab has been an idiot for years, and Morag has (been), too.  
 c. Rab has had an unread copy of *Lolita* on his shelf for as long as Bill has (?had). *BrE*

This all follows straightforwardly from the present account, as in all of these cases, the different options are marked by different potential licensors, i.e. verbs that have moved to bear their affixes. However, this optionality does *not* follow straightforwardly from Aelbrecht's (2010) Agree account; rather, it requires a litany of extra stipulations. Aelbrecht posits that the site of ellipsis in English is vP, and that little *v* bears the E-feature that Agrees with the licensing head in T. To get this to work, every auxiliary would have to be a little *v* that can bear an E-feature; alternatively, the E-feature would have to be borne on every AuxP. This is a serious problem for Aelbrecht's account, one that is not shared by the movement theory.

### 3.5 Two potential issues: infinitival VPE and negation

I would like to finish this section by discussing two potential issues for the present account of ellipsis licensing and the challenges they raise: VPE in infinitives and negation.

#### 3.5.1 Infinitival VPE

As is well known, English allows for deletion of VP-constituents in infinitives:

- (41) a. Rab wants to come to the party, and Morag wants to, as well.

- b. Rab expected to be fired, and Morag expected to be, as well.

In the literature, it is typically assumed that the missing VP phenomena we see in infinitives is the same as that which we see in tensed clauses; let us call this the ‘uniformity supposition.’ Uniformity is often assumed in spite of technical problems posed by bringing the two phenomena together. For example, Lobeck (1995) has to propose that infinitival *to* undergoes covert incorporation into the matrix verb at LF in order to license ellipsis; given that Lobeck’s account of ellipsis is essentially a phonological one, it seems at least suspicious to explain the licensing behaviour of *to* by appealing to covert movement. Aelbrecht (2010) accounts for infinitival VPE by proposing that both finite T and non-finite *to* are licensors in English, but we have already seen that this runs into problems in accounting for the distribution of ellipsis with epistemic modals in finite clauses.<sup>23</sup>

For the present account to work, we would have to propose that *to* moves to its position in T, and that the other auxiliaries also move to their surface positions. This is plausible in principle. If we are to carry on arguing that affix-hopping is derived from movement to projections of affixes in an inflectional layer, then such an account is motivated for infinitives, since these display a similar affix-hopping system. In addition, there are some arguments in the literature that *to* moves to its surface position: Radford (1997) argues that *to* moves to T since it sometimes appears above negation:

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<sup>23</sup>Two anonymous reviewers point out that the present theory does not address ellipsis in other non-finite contexts, such as in gerunds. As noted by one of the reviewers, the status of such examples is not clear, as some assume that such cases are always ungrammatical, while others report similar cases to be well-formed. (i) is from Aelbrecht (2010: 167), and (ii) is from Sag (1976: 26):

- i. \*I hadn’t been thinking about it, but I remember Morgan having been.
- ii. Which bothers you more: John’s having been arrested for drug dealing, or Bill’s having been?

At present I am unsure what to make of this variation, but I suspect that this may have some relation to the case of infinitival VPE discussed in this section. I leave the matter for future research.

- (42) a. I expect you to not worry about this.  
 b. I expect you not to worry about this.

On the assumption that *to* appears in T, we would have to assume that *not* raises in (42b).

Nevertheless, at present I will remain agnostic on the matter of whether the deletion that we see in infinitives is in fact the same phenomenon as VPE in tensed clauses, since there are a number of restrictions on infinitive VPE that do not apply to finite clause VPE. These restrictions are not readily explained by any account of ellipsis that I am aware of. First, we can see that infinitive VPE differs from finite clause VPE in the ability to optionally include auxiliaries in the ellipsis site (cf. Levin 1986 ch.4, which discusses examples just of *be*-omission). Compare (43) with (39)-(40) and the floating examples discussed above, which showed that finite clauses often allow for these larger ellipsis sites:

- (43) a. I expect Rab to be fired, and I expect Bill to \*(be), as well.  
 b. I want to be promoted, and Bill wants to \*(be), as well.  
 c. I would have expected Rab to have been promoted by now, and I would have expected Morag to ?\*(have been), as well.  
 d. Q: For this interview, do you think I will need to have prepared a presentation?  
 A: I'm guessing they will expect you to \*(?have), yes.

If VPE is able to target auxiliaries in matrix clauses, it's unclear why it cannot do so in infinitival clauses too.

Second, infinitives also do not allow for floating of *be*, *have* or *do* across dialects:

- (44) a. ??I expected Rab's friends to be fools, and I expected Morag's friends to be, as well.  
 b. ??I expected Rab's car to be red, and I expected Morag's car to be, as well.  
 c. ?\*I would have expected Rab's friends to have been wise, and I would have expected Morag's friends to have been, too.



- d. I expected Rab to have a red car, and I expected Morag to (\*have), as well.
- e. I expected Rab to buy a red car, and I expected Morag to (\*do), as well.

Examples like (44a)-(44c) are particularly instructive, since they indicate that infinitive ellipsis is not always cured by including the main verb; rather, infinitival ellipsis with these examples seems to be entirely impossible. Compare these with (44d)-(44e), which are acceptable if the floating verbs are omitted. The difference between these two sets of examples is that the former set involve a raising verb which might plausibly be generated higher than vP, while the latter set involves verbs that are arguably base-generated within vP.<sup>24</sup>

One conclusion we might draw at this stage is that infinitival VPE does not in fact involve PF deletion as triggered by movement, but rather the generation of a verbal proform, *pro*. Many researchers studying ellipsis have concluded that it is necessary to assume that natural language has to make use of both null proform and PF deletion in order to account for the full range of ellipsis phenomena (e.g. Hankamer & Sag 1976, van Craenenbroeck 2010, Cecchetto & Percus 2006). While this is theoretically undesirable (see Baltin 2007 and Baltin & van Craenenbroeck 2008 for attempts to dispense with the proform-ellipsis dichotomy), it seems that the diversity of the phenomena still requires both mechanisms. In the case of English infinitive VPE, the question is whether the empirical evidence provided by reliable diagnostics can decide between the two options.

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<sup>24</sup> A third difference between standard VPE and infinitival VPE is that infinitives never allow for pseudogapping, as noted by Levin (1986):

- i. \*Although I didn't expect him to eat steak, I did expect him to pizza.

It is often argued that pseudogapping is derived by movement of the remnant element out of the VP followed by deletion of the VP, so one may assume that the lack of pseudogapping in infinitives diagnoses the absence of VPE in these environments. However this claim is denuded of its importance in section 4.3, where I show that pseudogapping does not involve VPE, at least in some cases.

A number of researchers have tried to develop diagnostics that distinguish null proforms from VPE, although the nature of these diagnostics varies depending on what is being separated from VPE. For example, in the analysis of ‘short *do* replies’ in Dutch dialects, van Craenenbroeck (2010: 147) proposes ten different diagnostics that distinguish Dutch *do* replies from VPE. Of these, only four can carry over to the case here:

- (45) a. ‘modals and auxiliaries’
- b. ‘distribution’
- c. *there*-expletive subjects
- d. co-occurrence with *wh*-extraction

Although the terms for the comparison are different, it seems fair to say that infinitival VPE would also fail a version of a ‘modals and auxiliaries’ test, since (43)-(44) indicate that it differs from standard VPE with respect to the distribution of associated auxiliaries. With respect to these two diagnostics, infinitive VPE seems to pattern with an overt *do so* anaphor in the same position.

The data in (44) also indicates that infinitival VPE also doesn’t pattern with standard VPE with respect to distribution, since it cannot occur with copular *be*. Johnson (2001) also discusses a number of other restrictions on infinitival VPE that suggests that it also fails this distribution test, and he notes that the general condition seems to be that infinitival VPE cannot occur in islands (adjunct islands, subject islands, *wh*-islands, NP-islands), all contrasting with standard VPE (examples in (46) from Johnson 2001: 445):

- (46) a. \*Mag Wildwood came to read Fred’s book, and I also came to.
- b. \*You shouldn’t play with rifles because to is dangerous.
- c. ??Ron wanted to wear a tuxedo to the party, but Caspar couldn’t decide whether to.
- d. \*Lulamae Barnes recounted a story to remember because Holly had also recounted a story to.

- (47)
- a. Mag Wildwood came to ensure that Morag read Fred’s book, and I also came to ensure that she did.
  - b. Fred used to play with rifles all the time. That he did infuriated his father.
  - c. Ron wanted to wear a tuxedo to the party, but Caspar couldn’t decide whether he should.
  - d. That story that Lulamae Barnes recounted might not have frightened you, but I know a story that definitely will.

While there is more to say about these restrictions, they clearly indicate that infinitival VPE fails the distribution test.

The results of the other two tests are less clear, but they seem to indicate positive correlation between infinitive and standard VPE. Although it can seem forced (perhaps due to requirements of contrastive focus), (48) demonstrates that *there*-expletives can sometimes occur as subjects of infinitives that have undergone VPE:

- (48)
- a. Q: Will there be cake at the party?  
A: There will, yes.
  - b. Q: Will there be cake at the party?  
A: ?Well I would expect there to be.

The data on *wh*-extraction is less clear, since the example sentences are somewhat cumbersome due to the contrivances required to make *wh*-extraction from VPE possible (Schuyler 2001). Nevertheless, we can see a contrast between infinitival VPE and *do so* anaphora with respect to *wh*-extraction, thus indicating that it is in principle possible with infinitival VPE:

- (49)
- a. Although I don’t know who Rab will invite, I know who Morag will.
  - b. ?/??Although I don’t know who you expect Rab to invite, I do know who you expect Morag to.
  - c. \*Although I don’t know who you expect Rab to invite, I do know who you expect Morag to do so.
  - d. I expect Rab to invite lots of drunkards, and I expect Morag to do so, too.

This seems to indicate that infinitival VPE does indeed pass the wh-extraction diagnostic.

Note however that this final diagnostic might not be decisive of whether or not a putative ellipsis site is a proform or not, as there are cases where apparent proforms allow for other kinds of extraction and cases where apparently bona fide ellipsis sites ban extraction. Aelbrecht (2010) notes that Dutch Modal Complement Ellipsis (MCE) does not allow for wh-extraction, but she maintains that MCE involves ellipsis proper and derives the extraction facts from a specific model of ellipsis where deletion occurs prior to movement of the contained element; when a given constituent is deleted (by what Aelbrecht calls “derivational ellipsis”), it is blocked for extraction. Along similar lines, in Thoms (2010a) I show that the lack of extraction in British *do* constructions does not as such diagnose a lack of inner structure, but rather it diagnoses the non-availability of reconstruction into the ellipsis site; this is supported from independent evidence from the scope of quantified subjects and objects. Going in the other direction, we can show that proforms like *do so* are compatible with A-extraction in the right circumstances.<sup>25</sup> While pairs like (50) seem to indicate that *do so* is incompatible with unaccusatives, it turns out that this is due to the fact that *do so* requires a volitional nonstative predicate as its antecedent. When this is satisfied, as in (51), A-extraction is fine:

- (50) a. The river will freeze solid, and the lake will, too.  
       b. ??The river will freeze solid, and the lake will do so, too.

- (51) Mary arrived at the last possible moment, and John did so too.

This indicates that extraction is not a wholly reliable test for whether or not a given constituent is elided or replaced by a proform. Indeed the data from A-extraction indicates that the idea of the VP-proform may need to be reconsidered entirely (a

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<sup>25</sup>Thanks to Carson Schütze for bringing this to my attention.

research program advocated by Baltin and van Craenenbroeck 2008), since the gold standard diagnostic for the absence of internal structure – extraction – has proven unreliable in the present case.

With all of these diagnostics considered, we are left with a rather unclear picture of the nature of VPE in English infinitives. Although the evidence seems to favour a proform-style analysis, the issue clearly requires further investigation. What this data does surely indicate, however, is that the ‘uniformity supposition’ in the literature that the availability of VPE in matrix clauses would precipitate its availability in infinitives is one that should be suspected.

I would like to end this subsection with evidence from Hebrew that indicates that this supposition might in fact be incorrect. Doron (1999) and Goldberg (2005) argue that Hebrew has a VPE construction in finite clauses; (52)-(53) provide examples of this:

- (52) *Q: Šalaxt etmol et ha-yeladim le-beit-ha-sefer?*  
 sent-PAST2FSG yesterday ACC the-children to-house-the-book  
 ‘Did (you) send the children to school yesterday?’

*A: Šalaxti*  
 Send-PAST1SG

‘(I) did.’

(Doron 1999)

- (53) *Ehud hizmin otanu le-mesiba, ve-ani xoševet še-Dani gam*  
 Ehud invite-PAST3MSG ACC-us to-party and-I think that-Dani also  
*hizmin*  
 invite-PAST3MSG  
 ‘Ehud invited us to a party, and I think that Dani also did’

(Goldberg 2005: 34)

Noting that the verb moves to T in Hebrew, Goldberg (2005) calls this ‘verb-stranding VPE,’ and she goes on to provide a number of arguments in favour of

analysing these constructions as VPE.

Preliminary investigations into Hebrew indicate that it provides a counter-example to the ‘uniformity supposition’, as all the Hebrew speakers I have consulted who allow for VPE<sup>26</sup> do not allow for ellipsis in infinitives. The data is in (54), which contrasts minimally with its VPE counterpart, (55):

- (54) \**Dan ratza lishlo’ach et hayeladim le-beit-ha-sefer*  
 Dan want-PAST3MSG INF-send ACC children to-house-the-book,  
*mookdam, ve-ani ratziti lishlo’ach*  
 and-I want-PAST1MSG INF-send  
 ‘Dan wanted to send the kids to school early, and I also wanted to.’

- (55) *Dan ratza lishlo’ach et hayeladim le-beit-ha-sefer*  
 Dan want-PAST3MSG INF-send ACC children to-house-the-book,  
*mookdam, ve-ani ratziti*  
 and-I want-PAST1MSG  
 ‘Dan wanted to send the kids to school early, and I also did.’

This data provides no real problem for an analysis of English infinitive VPE as a proform, as we may surmise that the lexicon of Hebrew lacks the null proform that is used for infinitive ellipsis in English.

The matter of infinitival VPE is clearly one that requires further attention, but at present I will tentatively assume that the quirks and problems of the infinitival VPE data do not necessarily present direct counter-examples to the theory of ellipsis defended here. It should be noted that these quirks are not just a problem for the present theory, but for all theories of ellipsis licensing that I am aware of.

### 3.5.2 Negation

The second issue to be dealt with here is the curious case of negation. Negation seems to present a real counter-example to the generalization that non-moving

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<sup>26</sup>It is worth noting that, while all of the speakers readily accept verb-only answers like that in (52), not all found full clausal examples like (53) acceptable. I am unsure what to make of this variation.

material does not license ellipsis, as it is typically assumed that clausal negation has a fixed position in the syntactic tree, and yet negation seems to license ellipsis both in full and reduced form.

- (56) a. Rab said that I should come, but Morag said I definitely should not.  
b. Rab isn't here, and Morag isn't either.  
c. Children should not eat paint, and adults should not, either.

Furthermore, Potsdam (1997) argues that, in subjunctive clauses like (57), negation can license ellipsis in the absence of an auxiliary or any tense projection, at least in some formal registers.

- (57) Ted hoped to vacation in Liberia but his agent recommended that he not.  
(Potsdam 1997: 538)

Potsdam takes this as evidence for the claim that negation is a syntactic head, given Bresnan's (1976) claim that VP-ellipsis required the presence of a syntactic head for licensing. Again, on the assumption that *not* does not move to its surface position in (57), this presents a problem for the present theory.

In making his argument, Potsdam (1997) has to distinguish between full clausal negation like that in (56) and (57) and constituent negation, demonstrated by (58) below; he argues that the former is a head, whereas the latter is an adjunct. This distinction is required because constituent negation does not license ellipsis, as demonstrated by (59).

- (58) Some of the students have been not studying.

- (59) \*Some of the students have been studying but some have been not.

In the context of the present proposal we might choose to look at this distinction in a different way: the lower occurrence of negation does not allow for ellipsis, but the higher occurrence of negation does. If we were to link the two positions by

movement, then negation would also fit with the movement analysis of negation; for instance, we may propose that *not* is base-generated low and sometimes moves to the specifier of  $\Sigma P$ . In the absence of clear evidence against an account that relates the two positions for negation by movement, there is no way to distinguish between the two ways of looking at the data.<sup>27</sup>

One thing that would help to decide between these two views would be evidence that some other negative element can license ellipsis when it occurs in a higher position but not in a lower one. An example of this can be found in northern British English dialects, such as Scottish English, where the negative adverb *never* can license ellipsis when it occurs in a higher position. The example in (60) is in the Manchester dialect of Morrissey, taken from The Smiths' song *Stop Me If You Think You Think You've Heard This One Before*, and the examples in (61) are from my own Scottish dialect, confirmed by speakers of related dialects from around the north of the UK; the gray text indicates the interpretation assigned to the ellipsis:

(60) Who said I lied? Because I never *lied*.

- (61) a. Rab said I stole the cookies, but I never *stole the cookies*!  
 b. Rab said Morag lied about that but I'm pretty sure that she never *lied about that*.

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<sup>27</sup>One possible test might be to consider cases with both instances of negation, which might be analysed as involving adjunction of separate occurrences of *not* in both the higher and lower position. In such a case, we may then predict that neither *not* will license ellipsis, since neither has moved to its position. The degraded nature of (i) indicates that this is the case; cf. (ii), which shows that double negation of this kind is in principle acceptable. However, this test is problematized by the fact that including negation in a VP-ellipsis site is often degraded (though apparently less so), as with (iii):

- i. \*Rab said you should have not bothered turning up, but personally I think that you should NOT have *not bothered turning up*.
- ii. Rab said you should have not bothered turning up, but personally I think that you should NOT have not bothered.
- iii. ?Rab said that you should have not bothered turning up, and Morag said that you should have *not bothered turning up, too*.



- c. OK I might have lied about my weight before, but this time I never lied about my weight.

An important fact is that the use of *never* here does not correspond to the standard meaning *not ever*, but rather it corresponds to the meaning of the clausal negator *not*; thus all of the instances of *never* in the examples above could be replaced by *didn't*, and Morrissey's line is properly interpreted as *I didn't lie*. Importantly, this is the only reading that is available; for example, the second clause of (61a) does not mean *I never steal cookies*. The absence of the universal meaning is attested by the example in (61b), where the first clause asserts that the speaker had lied previously; if the meaning of the ellipsis was *not ever*, this would constitute a contradiction.

Note that this use of *never*, which I will call *Morrissey never* and abbreviate to *never<sub>M</sub>*, is not just restricted to ellipsis contexts, as the following examples attest:

- (62) a. You're a liar, I never<sub>M</sub> hit you! (= *I didn't hit you*)  
b. I never<sub>M</sub> lied! *He* did!

The data in (62b) is particularly instructive, as it demonstrates that Morrissey *never* is not just an alternative spellout of *didn't* (cf. Miller 2003): if this were the case, we would expect the main verb *lie* not to inflect for tense, since *never<sub>M</sub>* would have absorbed the T morpheme. If the main verb is spelled out without tense, the meaning of the first sentence changes to *I do not ever lie* and the follow-up sentence becomes infelicitous. Furthermore, *never<sub>M</sub>* cannot appear in a number of positions typically occupied by *didn't*, for example the C position in matrix wh- and yes-no questions, tag questions:

- (63) a. \*Who never<sub>M</sub> you vote for?  
b. \*Never<sub>M</sub> you vote for Cameron?  
c. \*You voted for Cameron, never<sub>M</sub> you?

Therefore there seems to be no reason to believe that *never<sub>M</sub>* is a spellout of *didn't*. Rather, it seems that *never<sub>M</sub>* is simply a ‘higher’ version of *never* that has a corresponding different scope, just as with the two different cases of *not*. It constitutes a direct counter-example to Bresnan’s claim that VP-ellipsis requires a syntactic head to license ellipsis, and as a result it also causes a problem for Potsdam’s account of *not* as a head, since the correlation between headedness and ellipsis is lost. However, a generalization that we can recognise is that a correlation between the position of a given negative element and its ability to license ellipsis. As was suggested for *not*, we might also propose that the two occurrences of *never* are related by movement. This would predict that lower occurrences of *never* – the standard use as a negative adverb, occurring to the right of the auxiliary in T – do not license ellipsis. This is demonstrated in (64).

(64) \*I have never tried yoga, and Rab has never, either.

Note that we may also analyse fragment responses like (65) as cases where the moved negative adverb licenses ellipsis in its derived position:

(65) Rab: Have you tried yoga?  
 Morag: Never *have I tried yoga*.<sup>28</sup>

This seems to indicate that it is movement rather than the interpretation that matters in whether or not *never* can license ellipsis. It also indicates that the head-adjunct distinction is irrelevant, given that *never* in (65) is unequivocally an occurrence of the same element that we find in (64).

Considering all of the above, it seems that it is possible to make a case for a movement analysis of the licensing ability of negation in English. Negation exhibits a number of other quirks in ellipsis contexts that cannot be reviewed here, but for

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<sup>28</sup>I represent this as the inverted *never have I* form in the ellipsis, but it is possible that this is a different structure, one that is general to adverb fronting rather than specific to the *never*-inversion structures.

now it is enough to note that the movement-ellipsis correlation can be observed in some situations. I leave working out the specific details of the movement analysis of negation to another occasion.

### 3.6 Summary

In this section I have argued that we can derive the full range of options in English matrix VPE from a movement theory of licensing. I show that a particular model of the inflectional layer derives verb movement in all of the cases except those that do not license ellipsis, exploiting the parallel with verb floating and the arrangement of affixes in the affix-hopping system. I show that independently motivated arguments for base-generating epistemic modals like *must* explain its inability to license ellipsis. I conclude by discussing the prospects for accounting for infinitival VPE and negation with mechanisms compatible with this system.

## 4 Extensions: A' movement licenses ellipsis

Ultimately, what the previous sections have shown is that movement is implicated in a domain of ellipsis, VPE, where it is not typically taken to be important, and I have argued that we can build a movement theory of ellipsis licensing on the basis of this strong correlation. In this section I sketch prospects for extending the movement licensing theory to other ellipsis constructions, paying particular attention to a set of constructions that do in fact directly implicate movement. I first show that sluicing and its related variants are perfectly amenable to this analysis, and that adopting it also enables us to solve a particular unresolved issue. I show that the analysis can also explain fragments and stripping, and that the contrasts with stripping and verb-less VPE strongly implicates that it is A' movement in particular that licenses

ellipsis. I also show that the theory can also explain some peculiarities in the cross-linguistic distribution of pseudogapping and propose that is better analysed as a kind of “sub-sluicing” rather than VPE. I then look at the possibility of extending the analysis to other constructions like NP-ellipsis.

## 4.1 Sluicing, spading and swiping

The ellipsis construction that is most obviously compatible with the movement licensing theory is sluicing, since it involves movement of a *wh*-phrase to Spec,CP, followed by ellipsis of its complement.

(66) Rab bought something for Morag, but I don’t know what.

Merchant (2001) provides a number of arguments in favour of a PF-deletion account of sluicing, showing that the *wh*-phrase that appears at the edge of the ellipsis must have moved to that position from within the deleted constituent. Previous analyses of ellipsis licensing in sluicing (i.e. Lobeck 1995, Merchant 2001) stipulate that the licensing head is  $C^0_{[+wh]}$ . In the present account, however, we do not require this stipulation. Rather, sluicing is always licensed because it necessarily involves movement; since the *wh*-phrase has moved to its surface position, it licenses the deletion of its full complement. This also explains the fact that languages with *wh*-in-situ tend not to have English-type sluicing, resorting instead to what Merchant (1998) calls ‘pseudosluicing:’ the lack of movement correlates with the lack of sluicing.

The movement theory of ellipsis comes with one immediate benefit in the realm of sluicing: it provides a principled explanation for the fact that sluicing never preserves any of the elements that normally appear in  $C^0_{[+wh]}$  when there is no ellipsis. Merchant (2001: 74-82) points out that the licensing head theory wrongly predicts that elements that are base-generated in  $C^0_{[+wh]}$ , such as complementizers

in languages that lack the Doubly Filled Comp Filter, should also survive sluicing.<sup>29</sup> Merchant shows this with data from Dutch, Frisian, Slovene and Irish; the following example is from Scottish Gaelic:

- (67) *Bhruidhinn thu ri tidsear air choireigin, ach chan eil*  
 Speak-PAST 2S to teacher on some.case but neg be.PRES-DEP  
*cuimhne agamsa cò fear (\*a)*  
 remember at-1S.EMPH who one whC  
 ‘You spoke to some teacher, but I don’t know which (\*that)’.

These facts follow straightforwardly from the movement theory of licensing, since it involves deletion of the complement of the moved element, and this includes  $C^0$  and any elements it may contain. Furthermore, this account dictates that elements base-generated in this position will never appear under sluicing, since they have not moved to their position and hence cannot license ellipsis in their complement.<sup>30</sup>

An important aspect of the present account of ellipsis in sluicing and related constructions is that it does not rule out the possibility of *any* elements co-occurring with a remnant in sluicing; rather, it predicts that an element should be able to survive with the wh-phrase so long as that element has moved to that position. Van Craenenbroeck (2010) identifies one such construction in Dutch, where a wh-phrase co-occurs in a sluice alongside a demonstrative pronoun, what has since become known as *spading* (for **S**luicing **P**lus **A** demonstrative **I**n **N**on-insular **G**ermanic).

- (68) *Jef eid iemand gezien, mo ik weet nie wou da.*  
 Jeff has someone seen but I know not who that<sub>dem</sub>  
 ‘Jeff saw someone, but I don’t know who.’

<sup>29</sup> Merchant (2001: 61-82) also discusses the fact that non-operator elements that normally move to  $C^0_{[+wh]}$  do not appear under sluicing, such as auxiliary raising in English. His account of these cases appeals to the nature of feature-checking and economy considerations. Hartman (to appear) explains auxiliary raising in English in terms of the economy condition MaxElide. See also Thoms (2010b) for discussion of some interesting counterexamples.

<sup>30</sup> A reviewer notes that van Craenenbroeck and Lipták’s (2008) discussion of non-wh-sluicing is an example where the head of the CP layer hosting the sluice is not deleted. I refer the reader to Thoms (2010b) for discussion of this and related issues.

(Wambeek Dutch; van Craenenbroeck 2010: 6)

Van Craenenbroeck demonstrates clearly that the *da* in these examples is a demonstrative and not its complementizer homophone, and he provides a number of arguments for analysing this element as a demonstrative pronoun that has moved from an underlying cleft construction to a CP projection below the target of wh-movement. He also argues that the movement of *da* is an instance of focus movement; evidence includes the fact that *da* must bear focal stress. Given his analysis, we can account for spading within the current system, since the element that appears at the edge of ellipsis, the demonstrative pronoun *da*, has gotten there by movement.

Another example of a phenomenon where another element occurs alongside the wh-phrase in sluicing is what Merchant (2002) calls *swiping*, for **S**luiced **W**h-word **I**nversion **I**n **N**orthern **G**ermanic. As the name suggests, this is when the wh-element within a sluiced wh-PP undergoes inversion with the head preposition, as demonstrated by (69) for English.

(69) Rab taught a class today, but I don't know what about.

This construction was first identified by Ross (1969b), and Merchant (2002) and van Craenenbroeck (2010) have recently developed analyses that derive these constructions from standard sluicing. While the two differ in the technical implementation – Merchant argues for head movement of the wh-word to adjoin to the P at PF, while van Craenenbroeck argues for subsequent movement of the wh-word from within the PP to a higher projection in the CP domain – they are both amenable to the present account, since they both hold that the preposition that inverts with the wh-phrase has gotten to its surface position by phrasal movement of the PP. As a result the PP can license ellipsis in its complement, and whether or not the wh-word and preposition subsequently invert within the PP (by head movement or

movement out of the PP) does not alter this. Thus swiping can be readily accounted for by the movement theory of ellipsis.

## 4.2 Fragment answers and stripping

If the focus-movement in spading can allow the demonstrative pronoun *da* to license ellipsis, we may expect that focus movement will generally license ellipsis in the complement of the moved element. Two ellipsis constructions that have been argued to involve focus movement to a left-periphery position followed by deletion of the full sentential complement of the moved phrase are fragment answers, (70), and stripping, (71):

- (70) Q: Who did she invite?  
A: Rab.

- (71) Abby speaks passable Dutch, and BEN, too.

Merchant (2003, 2004) and Depiante (2000) provide a number of arguments to support focus-movement-plus-PF-deletion accounts of fragments and stripping.<sup>31</sup> For example, in the case of fragment answers, Merchant shows that they are sensitive to complementizer deletion, like normal left-dislocated constituents:

- (72) a. A: What does no one believe?  
B: #(That) I'm taller than I really am.  
b. No one believes (that) I'm taller than I really am.  
c. #(That) I'm taller than I really am, no one believes.  
(Merchant 2004: 690)

In the case of stripping, Depiante (2000) and Merchant (2003) show that the element that appears in the second conjunct resembles an element that has been

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<sup>31</sup>Temmerman (2009) also presents several compelling arguments for this analysis of fragments, based on differences between Dutch and English with respect to the availability of embedded fragments and the alleviation of island effects.

moved to its surface position with respect to some syntactic diagnostics. For example, in languages that do not allow for preposition stranding, the second conjunct in stripping must pied-pipe the targeted PP; this is in contrast with a non-P-stranding language in English, in which the stripping conjunct can appear without the preposition (as indicated by the translation):

- (73) *Milisa me ton Saki xthes, kai \*(me) tin Anna.*  
 I.spoke with the Sakis yesterday and with the Anna  
 ‘I spoke with Sakis yesterday, and (with) Anna.’  
 (Merchant 2003: 3)

Merchant (2003) also shows with a series of other tests that the second conjunct is not just a minimal DP coordinated with the matrix subject, thus ruling out a gapping analysis for stripping and favouring the PF deletion account.

As may be obvious by now, fragments and stripping can be easily subsumed by the present account of ellipsis licensing, since they involve focus movement of the licensing element to its surface position. What is important, however, is that these examples all involve instances of a kind of A’ movement. Examples like (71) are in minimal contrast with sentences like (74a), which would typically be analysed as an example of failed VPE (cf. its successful counterpart):

- (74) a. \*Abby speaks passable Dutch, and Ben, too. ‘*Ben*’ lacks focal stress  
 b. Abby speaks passable Dutch, and Ben does, too. ‘*Ben*’ does not require focal stress’

What distinguishes *Ben* in (71), which can license ellipsis of its complement, from *Ben* in (74a), which cannot? Under standard assumptions, both phrases have moved to the position in which they appear, so we might expect that they would both license ellipsis. However, they differ in the kind of movement which has taken place: A-movement in (74a), and A-movement followed by subsequent A’ movement in (71). The difference, then, is the extra stage of A’ movement.



Given that all of the other examples of ellipsis licensing that have been discussed in this paper are examples of non-A-movement (A'-movement and head movement), we might conclude that ellipsis is not licensed by movement, but specifically that it is licensed by non-A-movement. This is stated as a generalization below:

(75) Ellipsis licensing generalization: ellipsis is licensed only by non-A-movement.

In the final section I will discuss theoretical motivations for this generalization. For now, however, it is worth noting that, in addition to A-movement to subject positions, A-movement to object positions also does not license ellipsis:

(76) \*I expect Rab to leave, and I expect Morag, too.

Whether any other kinds of A-movement within sub-clausal constituents do or do not license ellipsis is a subject for future study.

### 4.3 Pseudogapping

The previous subsection analyses movements to focus projections in the left periphery that license the ellipsis of the complement. In addition to these, there are also arguments in the literature for an ellipsis construction that involves focus movement to a focus projection not in the left periphery, but within the TP: pseudogapping. Pseudogapping is an ellipsis construction which deletes all of the VP except one 'remnant,' and it differs from gapping in that it requires an auxiliary in T.<sup>32</sup>

(77) Rab will bring wine and Morag will bring beer.

Previous analyses of pseudogapping have argued that it is derived either by rightward Heavy NP Shift (HNPS) followed by VPE (Jayaseelan 1990), or A-movement of the object to Agr<sub>o</sub>P followed by VPE (Lasnik 1999), but both of these analyses

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<sup>32</sup>For discussion of the various syntactic properties that distinguish gapping and pseudogapping, see Johnson (2004) among others.

have their problems, and as a result Takahashi (2004) argued for the unfortunate conclusion that both mechanisms are required to derive pseudogapping.

However, in recent work Jayaseelan (2001) and Gengel (2007) have argued that the best analysis for pseudogapping involves A'-movement of the remnant to a focus projection which occurs in the inflectional layer somewhere between vP and TP, followed by deletion of the vP/VP.<sup>33</sup> Jayaseelan (2001) provides independent evidence for the existence of such 'middle field' focus projections with scrambling data from Malayam, and Gengel (2007) shows that the focus movement account deals with a lot of the problems suffered by the previous approaches, thus providing a unified account of pseudogapping. In this account, she follows Merchant's (2001) of ellipsis by checking of an E-feature, and the E-feature involved in pseudogapping is the same one that is involved in standard VPE. Aelbrecht (2010) proposes a similar account of the licensing of pseudogapping in her Agree model.

The VPE account of pseudogapping is not compatible within the theory proposed here.<sup>34</sup> I have proposed that the licenser for ellipsis is always the element at the edge of the ellipsis, and in the cases of pseudgapping this is the remnant, *beer* in (77), rather than the surviving auxiliary. This theory would predict that pseudogapping is to be grouped with the focus movement ellipsis constructions discussed in the previous subsection, as a kind of "sub-sluicing" within the TP. The question, then, is whether the VPE and sub-sluicing analyses of pseudogapping can be teased apart. An important difference between the two theories is that the VPE account necessarily predicts that pseudogapping will only occur in languages with VPE. The sub-sluicing version doesn't make this prediction, since all that is needed for pseudogapping is deletion of the complement of the element in the

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<sup>33</sup>Thanks to an anonymous reviewer for noting the importance of Gengel's work.

<sup>34</sup>It might be compatible with a rightward movement account of pseudogapping, as in Jayaseelan (1990), but as mentioned above, there are problems with this specific analysis of the movement operation.

relevant TP-internal Spec,FocP, that is, the remnant.

Norwegian provide the crucial evidence. Gengel (2007) reports that pseudogapping is available in Norwegian, Icelandic and Danish, and she presents (78) as an example. However, it turns out that Norwegian lacks VPE, as shown by (79):

- (78) *Mary vil gi mange penger til Susan og Paul vil til Jane.*  
Mary will give much money to Susan and Paul will to Jane.  
'Mary will give much money to Susan, and Paul will to Jane'  
(Gengel 2007: )

- (79) \**Mary vil gi mange penger til Susan og Paul vil, også*  
Mary will give much money to Susan and Paul will, too

'Mary will give much money to Susan, and Paul will, too'  
(Terje Lohndal, personal communication)

(79) contrasts minimally with (78) and it indicates that the deletion process in pseudogapping is not VPE. The alternative analysis, proposed here, is that the well-formed ellipsis seen in (78) is produced by sub-sluicing below the focus-moved remnant PP; this analysis is untroubled by the fact that Norwegian lacks VPE.<sup>35</sup> Thus I conclude that pseudogapping is best analysed as a case of sub-sluicing rather than VPE (contra Gengel 2007, Aelbrecht 2010 and many others).

## 4.4 Ellipsis in DP

In section 3.5.1 I noted that researchers in the field of ellipsis have acknowledged the necessity of maintaining the "Duality of Ellipsis," a proposal that admits both PF-deletion and null proform accounts of ellipsis. Of all the ellipsis constructions

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<sup>35</sup>The fact that Norwegian lacks VPE is an interesting issue in itself. Given the discussion earlier, it may be attributed to the fact that it lacks V-to-T movement. This then begs the question of why movement to C for the V2 requirement does not allow for ellipsis, but as was observed earlier, it seems that ellipsis is generally not possible with verb movement to C. See the references cited in footnote 29 for discussion.

in natural language, the one that seems most likely to receive a proform account is ellipsis within DP, which I will refer to as NP-ellipsis (NPE) for clarity. (80) shows some examples of the phenomenon in English.

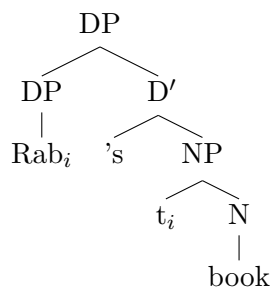
- (80) a. Rab's book was terrible, but Morag's was great.  
 b. Rab is bringing some cakes. You should bring some, too.  
 c. Rab told me to bring three cakes, but I thought it would be better if I brought at least five.

Studying variation in NPE across Germanic and Romance, Lobeck (1995) argues that the ellipsis site in DP is a null proform of the same ilk as the *pro* that is found in *pro*-drop languages; she shows that the 'strong agreement' that is required for identification of null-subject *pro* is very similar to the restrictions on what kinds of elements can license NP-ellipsis.

In recent work a number of authors have called this correlation between *pro* and NP-ellipsis into question; for example, Sleeman (1996) argues that the possibility for NP-ellipsis is not tied to strong agreement, but rather a feature associated with partitivity, [+PARTITIVE], based on an in-depth study of Romance NPE. Much subsequent work has thus disfavoured the *pro* account in favour of developing PF deletion approaches to NPE, and as such these theories bring NPE into the purview of the present proposal. To explain NPE, then, we would have to identify a number of sub-types of A' movement and head movement within the DP.

Of the English examples in (80), (80a) readily admits such an analysis. A standard analysis (e.g. Abney 1987) for the structure of a possessive like *Rab's book* is that the subject possessor *Rab* is generated in Spec,NP and moved into Spec,DP:

(81)



Since *Rab* moves to its position and merges with the bound morpheme, we would predict that it licenses ellipsis, as is the case.<sup>36</sup> To be compatible with the licensing theory, the analysis requires that this is an instance of A' movement (i.e. head movement), rather than A-movement. Although this is not a wholly settled matter, it seems unlikely that possessor movement is A-movement, since it is often optional and dependent upon phonological factors like heaviness, unlike other forms of A-movement.<sup>37</sup> These issues aside, (80a) seems to be a good candidate for an NP-ellipsis construction that is readily accounted for by the movement licensing theory.

This is all very well for possessives, since they clearly involve word order rearrangements that diagnose movement. However, what are we to do with examples like (80b)-(80c), which do not show any clear signs of DP-internal movement? As it happens, many proposals in the literature have tied various other kinds of NPE to movement within DP. For example, Corver and van Koppen (2009) show that NP-ellipsis in Dutch and Frisian involves a special morpheme that marks focus on the licensing element, and they argue that this morpheme is the head of a focus projection in DP to which the licensing element moves. Eguren (2009) presents a similar analysis for Spanish. Alexiadou and Gengel (to appear) contest the focus movement analysis, arguing instead in favour of an analysis where classifiers license

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<sup>36</sup>Note that this analysis would require suffixation of the *'s* morpheme to the nominal in Spec,DP prior to deletion. See Thoms (2010b) for discussion of the interaction between ellipsis and suffixation in situations parallel to this one.

<sup>37</sup>An alternative and perhaps more fruitful way to look at this would be to consider the independently attested differences between the standard forms of clausal A-movement and DP-internal A-movement.

ellipsis, but their analysis still involves a set of DP-internal movements to classifier projections.

Preliminarily, then, we can note that consideration of the cross-linguistic picture indicates a movement-based analysis of NPE of examples like (80b)-(80c) has some promise. What is required, however, is that the predictive nature of the theory be sharpened, in that we should aim to show that situations where we would *not* expect movement coincide with situations where ellipsis is not licensed. This was the nature of the argument from VPE, and future research should aim to test the theory in a similar way with evidence from NPE.

## 5 Implementation and explanation

In what has preceded I have proposed that movement is required for the licensing of ellipsis by PF deletion. In particular, I have argued that ellipsis is licensed only by head movement and A'-movement, which may be grouped together as non-A-movement. This is stated in (75).

(75) Ellipsis licensing generalization: ellipsis is licensed by non-A-movement.

Although it has not previously been made explicit, ‘movement’ here refers only to *overt* movement. This is a natural assumption on standard accounts of covert movement that propose that it is movement at LF, since covert movement operation would not be able to alter the phonology of the sentence. Note, however, that some theories of the syntactic interfaces reject the idea of LF movement, preferring instead to account for apparent LF movement phenomena like QR and reconstruction in terms of pronunciation principles and conditions on linearization (i.e. Bobaljik 1995, 2002; Pesetsky 1998). In this section I derive (75) from general conditions on movement; the explanation developed here is compatible with both views of the

syntax. The ultimate effect of the proposal is to collapse ellipsis and copy deletion into the one mechanism, reviving a suggestion from Chomsky (1995) that has tempted much of the work on ellipsis that has followed in its wake.

One of the core assumptions in recent Minimalist syntax (e.g. Chomsky 2000, 2004, 2008) is that what we call ‘movement’ is actually an instance of ‘copy and delete,’ where the base-generated element in is copied and then re-merged in the higher position, and the lower copy is deleted in the phonological component. This is known as the Copy Theory of Movement. One of the core issues for proponents of the Copy Theory is how to explain the fact that base copies are not pronounced, even though they do seem to be somehow ‘present’ at LF. The evidence for the presence of lower copies comes largely from reconstruction effects, as demonstrated by (82)-(83), and such effects constitute the main empirical support for the Copy Theory (see e.g. Fox 1999; Sauerland & Elbourne 2002; Takahashi & Hulsey 2009).

- (82) a. \*Which of Rab’s<sub>i</sub> friends does he<sub>i</sub> resent?  
 b. \*Which of Rab’s<sub>i</sub> friends does he<sub>i</sub> resent *which of Rab’s<sub>i</sub> friends*  
*Condition C violated*

- (83) a. Which picture of himself<sub>i</sub> does Rab<sub>i</sub> like?  
 b. Which picture of himself<sub>i</sub> does Rab<sub>i</sub> like *which picture of himself<sub>i</sub>*  
*Condition A satisfied*

In most recent formalisms of the conditions on movement, such as Nunes (2004), copy deletion is required in order to ensure that a given syntactic structure can be linearized at PF. He assumes Kayne’s (1994) Linear Correspondence Axiom, which dictates that if an element A c-commands B, A precedes B in linear order (and hence B follows A); deletion of one of the wh-phrases in (83b) is thus required since the wh-phrase in Spec,CP c-commands the one in the base position, and as such the structure is unlinearizable, since it cannot precede and follow itself.

Here I would like to propose that ellipsis is a reflex of this linearization requirement, namely that it is a ‘repair strategy’ that is required to save a linearization failure.<sup>38</sup> Specifically, ellipsis occurs at the edge of a moved element when the base element in the movement chain is not deleted locally; that is, the base copy is not deleted immediately at the point when it is moved, as in standard movement (‘Copy and Delete’). When the element is moved into its new position and the base copy is not deleted locally, deletion of the entire complement of the landing site is required to ensure that the structure can be linearized, since otherwise the higher copy will c-command the undeleted lower copy.<sup>39</sup>

Two points about the operation involved of deletion involved in copy deletion and ellipsis, simply called Delete. First, Delete may be understood as an instruction to PF, like “do not pronounce,” that is added at the affected constituent; as such, it is not relevant until the constituent is spelled out, which would be at the phase level (vP and CP) in the multiple spellout model of Chomsky (2000, 2004, 2008). We could say, then, that constituents are “marked for deletion” in the derivation at the point of movement, but not actually deleted until PF. This means that extraction from the ellipsis site is possible, since the elements within a constituent that has been marked with the “do not pronounce” instruction are not affected by these instructions until spellout; extraction from the ellipsis site is possible if it precedes spellout. Note also that the instructions can sometimes be issued at intermediate

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<sup>38</sup>Thanks to Jeremy Hartman for suggesting this approach.

<sup>39</sup>A slightly different way to conceive this is that ellipsis is a different ordering of the basic operations involved in movement. Consider the following characterization of standard movement: the moving element X is targeted by the operation Copy, then it is targeted by Delete, and finally it undergoes (re)Merge in the landing site. Thus the ordering of operations is Copy-Delete-Merge, and Delete always targets the element affected by previous operation. Now consider ellipsis: first X is Copied, then (re)Merged into the landing site for movement, YP; then, Delete applies to the element targeted by the previous operation, which in this case is the landing site for movement, YP, but to the exclusion of the newly created specifier (since this was not part of the element targeted by Merge; note that this requires head movement to specifiers, as in Matushansky 2006). This would derive deletion of the whole complement of the target landing site, i.e. ellipsis by movement.



points in a given movement chain, as in the case of a yes no question with VPE:

(84) Are you?

In an example like this, ellipsis is licensed by the movement of the verb to T; subsequent movement of the verb to C does not affect this, since the complement of T has already been marked for deletion. In this definition of Delete the proposed model differs from that of Aelbrecht (2010), which proposes a “derivational ellipsis” that deletes the affected constituent as soon as the licensing head Agrees with the E-feature. Aelbrecht (2010) uses this to derive restrictions on extraction in some ellipsis constructions.<sup>40</sup>

Second, we may wonder why ellipsis only occurs when it is required to save a linearization failure; that is, why is it not always an option? I propose that this is a reflex of derivational economy that arises because Delete is a “costly” operation (just like Move) that only applies when it is required for convergence. To see why this is so, we need to consider what makes an operation costly. Chomsky (1995: 225-226) argues that different operations in the syntax can be distinguished as costless or costly for the calculation of derivational economy depending on whether or not they are required for the definition of a derivation: operations that are required to form a derivation are costless, while operations that are only required

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<sup>40</sup>As mentioned above, one of these results are contended by Thoms (2010a), and Aelbrecht (2010) also notes some false predictions, such as with the case of antecedent contained deletion in MCE constructions. Note, also, that Aelbrecht’s proposal requires deletion to be a somewhat strange operation that communicates the instruction to “block vocabulary insertion” to every individual element contained within the E-feature-bearing constituent, as otherwise elements extracted from that constituent prior to spellout may escape the deletion instruction before it has been applied at spellout. Spellout is where “block vocabulary insertion” applies to the full constituent; the elements dominated by the constituent would be oblivious to this instruction prior to spellout, at least without this mass downward communication of the E-feature’s instructions to every individual element contained within. If the individual elements in the constituent didn’t all bear this instruction, nothing would prevent them from being extracted and pronounced higher in the structure, at least in a situation where the attractor is below (or is) the next highest phase head (as in most of the crucial cases). This kind of mass downward inheritance of the E-feature’s phonological instructions seems highly dubious, however, and there are non-trivial questions about how it could be implemented.

to ensure convergence are costly. Chomsky assumes that the only costless operations are Select and Merge. Nunes (2004: 166) points to Chomsky’s suggestion that a computation must reach the pair  $(\pi, \lambda)$  to be a derivation, where  $\pi$  is a set of instructions to the articulatory-performance system (PF) and  $\lambda$  is a set of instructions to the conceptual-intentional system (LF) (Chomsky 1995: 219), and he takes this to be an indication that an unlinearizable PF representation does not meet the basic requirement for the definition of a derivation; thus he concludes that Delete (or the related operation Chain Reduction) is also a costless operation. This assumption is questionable, however, since an unlinearizable PF is still a “set of instructions” to the A-P system. The fact that this is a contradictory set of instructions is besides the point; indeed Chomsky acknowledges the possibility of such instructions, saying that the “legitimate objects” that are interpreted at the interfaces may be interpreted “perhaps as gibberish” (Chomsky 1995: 219); contradictory pronunciation instructions would seem to be a clear example of gibberish for the A-P system. I therefore reject Nunes’ claim that linearizability is a condition for the definition of a derivation; rather, it is a condition for convergence at the interface. Therefore Delete can be characterised as a costly operation,<sup>41</sup> and we can conclude that ellipsis licensing is effectively a reflex of derivational economy.

The notion of ellipsis as a repair strategy is not new, as Fox and Pesetsky (2005) develop similar proposals in their theory of Cyclic Linearization; specifically, they propose to account for some of Merchant’s (2001, 2008) ‘PF islands’ by proposing that the island repairs we see in sluicing involves ellipsis as a means of avoiding linearization failures (within the cyclic spellout system that they propose).<sup>42</sup> However, their explanation only accounts for a specific set of derivations, where an element

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<sup>41</sup>Note that this might in turn allow us to explain the fact that movement is costly (Chomsky 1995), since movement always requires an instance of Delete.

<sup>42</sup>A variant on this ‘repair by deletion’ approach was advocated earlier in the work of Ross (1969b).

undergoes leftward movement into a higher phase (cyclic domain) from a non-edge position. The cases discussed here do not involve such derivations, although they would involve violations of the principles inherent in Fox and Pesetsky's system.

Under this proposal, then, the apparent optionality of ellipsis reduces to the optionality of leaving a lower copy unpronounced at the point of movement; consequently, the ability for a given movement process to license ellipsis is tied to whether the product of that movement process can ever allow pronunciation of (part of) lower copies. If a given movement process cannot ever leave lower copies, on the other hand, then this means that it can only ever allow for local deletion of base copies, thus preventing it from licensing ellipsis. If this is the case, then we can arrive at a natural explanation for (75): non-A-chains can sometimes allow for the pronunciation of lower copies, but A-chains never do. This may be stated as a generalization:

- (85) Copy pronunciation generalization: lower copies can sometimes be pronounced in non-A-chains, but never in A-chains.

Generalizations of this kind are somewhat contentious, since the second clause is dependent wholly upon negative evidence. Nevertheless, (85) seems to have a flavour of truth to it. There are numerous attested instances of head- and A'-movement that allow for pronunciation of the lower copy: Quantifier Raising and other examples of covert movement; partial and multiple spellout in wh-chains in Germanic and Brazilian Sign Language (e.g. McDaniel 1989; Nunes 2004; Fanselow 2006); verbal repetition constructions in Nupe (Kandybowicz 2007); covert wh-movement in non-multiple-wh-languages (Huang 1982; Pesetsky 2000); contrastive focus reduplication in English (Ghomeshi et al 2004); multiple spellout in focus movement in American Sign Language and Vata (Petronio & Lillo-Martin 1997; Koopman 1984); demonstrative doubling in Michif and Cree (Rosen 2003); V-topicalization in He-

brew and Vietnamese (Trinh 2009); split topicalization in Germanic (van Riemsdijk 1989); and so on. Although not all instances of non-A-movement allow for multiple spellout structures to be pronounced, it is clear that the possibility of non-deletion of lower copies is often available in non-A-chains; indeed in some cases, it seems to be obligatory (see e.g. Trinh 2009 for discussion).

This can be contrasted with A-movement: there are very few empirically validated proposals in the literature that posit pronunciation of lower copies of A-movement chains. I use the qualification ‘empirically validated’ since there are some examples of proposals in the literature of examples of ‘covert A-movement,’ where there is A-movement to higher projections at LF that are proposed purely for theoretical reasons; for example, Chomsky (1993) assumes that object DPs undergo covert movement to Agr<sub>O</sub>P in order to check Case features at LF, on the assumption that objects must move to an Agr projection to check Case at some point in the derivation if subjects also do so in the overt syntax. However, there is typically little or no evidence for such movements (see Wurmbrand 2006 an example of argument against covert A-movement in German), and this particular proposal has since been abandoned in more recent developments of the theory where covert movement can be dispensed with in place of in-situ Agree (e.g. Chomsky 2004).

There are two potential counter-examples to this generalization that I am aware of.<sup>43</sup> The first is Potsdam (2009), which argues that Malagasy has a backwards

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<sup>43</sup>A reviewer notes two further potential counter-examples that should be considered. The first (also brought to my attention by Jeremy Hartman and Jason Merchant) is ‘copy raising,’ a phenomenon which has received an A-movement analysis previously in the literature (i.e. Ura 1998) and which involves partial spellout of a pronominal in a lower position in a putative A-chain:

- i. John seems like he is happy.

However, more recent work on copy raising, such as Potsdam and Runner (2001) has shown that the A-movement analysis of copy raising is untenable for theoretical and empirical reasons, and instead they propose a base-generation account where the matrix and embedded subjects are not related by A-movement. Under such an analysis, copy raising does not constitute a counter-example to the proposed generalization, so I put it to one side here.

control construction and that this can only be dealt with under the copy theory of control, in which the element traditionally analysed as PRO is a copy of A-movement (Hornstein 1999). However, the movement theory of control is hotly contested, having generated a large literature in recent years (for rebuttals, see Culicover & Jackendoff 2001; Landau 2003; Bobaljik & Landau 2009; for defenses, see Boeckx & Hornstein 2006; Boeckx, Hornstein & Nunes 2010), so at the least the issue is far from settled. Furthermore, the pronunciation of the lower ‘copy’ in Malagasy control actually constitutes an outstanding theoretical issue for the movement theory control, as Boeckx, Hornstein and Nunes (2010) provide an account that predicts that only higher copies will be pronounced; indeed it is a stated assumption in their paper that “A-copies are not pronounced.” What this shows that, whatever the analysis of backwards control turns out to be most viable, the unique property of allowing the lower element to be pronounced will be expected to follow from independent principles. As such, then, Boeckx, Hornstein and Nunes seem to assume that the generalization in (85) is a correct one, and one that will be compatible with the right theory of control.

The second potential counter-example is Potsdam and Polinsky (to appear), which argues that there is evidence for ‘backwards raising’ in the Northwest Caucasian language Adyghe. The evidence for backwards raising is perhaps more significant, since there isn’t the same degree of equivocation with a case like this as there is for backwards control, and as such this case presents a much clearer problem

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The second issue relates to apparent evidence for suspension of the EPP in ellipsis sites. Merchant (2001) and van Craenenbroeck and Den Dikken (2006) argue that evidence from island repair and NPI connectivity suggests the condition on overt A-movement to Spec,TP, the EPP, can be suspended under ellipsis, and that this suggests the EPP is a PF condition (see also Landau 2007 for interesting arguments for this position). They also argue that evidence from scope and binding suggests that subjects can undergo covert A-movement, and a reviewer suggests this may be a counter-example to the generalization. This is not the case, however, as the generalization proposed here is that A-movement can never spell out a lower copy. In the cases at hand, however, the lower copy isn’t spelled out, and the higher copy isn’t either, because they are both in the ellipsis site.

for the generalization stated above. What it is about A-movement that prevents it from leaving base copies undeleted remains an outstanding issue, but it seems clear that this issue will be better understood by looking at these putative exceptions and considering the properties that may be factors in determining the availability of these rare movement operations. Thus the question turns from whether there is covert A-movement to why we get covert A-movement in the vanishingly rare exceptional cases.

A related outstanding issue for the typological perspective on ellipsis is this: why do some kinds of non-A-movement that license ellipsis in some languages not license ellipsis in others? In the context of the present paper, where I have argued that verb movement licenses ellipsis, we may wonder then why verb movement does license ellipsis in some cases (e.g. the English cases discussed above), we may wonder why verb movement does *not* license ellipsis in many other cases, such as main verb movement to T in Romance.

Lobeck (1995) sketches an account to deal with the difference between English on the one hand and French and German on the other. She notes Chomsky’s (1993) suggestion that verbs in verb-raising languages like German and French bear strong features that must be checked at S-Structure, and that English verbs bear weak features that can be checked at LF. On the basis of this, she proposes that “only unchecked features can identify VP-ellipsis at S-Structure” (Lobeck 1995: 162), and thus concludes that this rules out ellipsis in German and French; on the other hand, since English could allow features to remain unchecked until LF, it would allow ellipsis. However, this analysis is problematized by the fact that English raising main verbs *be* and (British) *have* can bear strong features (on the contemporaneous analysis of Chomsky 1995, Lasnik 1995), and directly falsified by the evidence for ‘verb-stranding VPE’ discussed by Goldberg (2005) and others. Lobeck’s attempt

to derive the lack of VPE from general principles is well-motivated, but the cross-linguistic picture shows us that it is not yet possible. Other accounts of this kind, such as Aelbrecht's (2010) account of Modal Complement Ellipsis, put the variation in the lexicon, arguing that one language may have the given licensing head (and matching E-feature) but another may not.

The present theory has motivated a theoretical generalization about ellipsis with respect to variation across types of syntactic operations. Unfortunately, it seems that this theory cannot yet motivate a full explanation of cross-linguistic variation with respect to the availability of ellipsis across instances of the same movement operation in different languages. Within the terms of the explanation provided in this section, we would assume that the ability for a particular movement operation (like head movement) to license ellipsis would be contingent upon whether that operation can sometimes allow for non-deletion of base copies.<sup>44</sup> This would then lead us to consider the related question of what it is that prevents non-deletion of a base copy. There are some theories that relate to this in the literature; for example, Nunes (2004) ties obligatory deletion of base copies to economy conditions on feature deletion, appealing to the fact that base copies typically bear unchecked features, whereas higher copies would have their features checked by the higher attractor. We would expect that understanding what it is that systematically disallows non-deletion in the extreme case of A-movement would prove instructive for this line of inquiry; given that there are some proposals in the literature that A-movement is not motivated by feature-checking (Lasnik 2001), we may conclude that variation in feature-checking is crucial to understanding the variation in copy

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<sup>44</sup>A reviewer notes that the issue of whether or not a given A'-movement can allow for resumption may be of some importance to this discussion. As he/she notes, this distinction seems relevant in the case of van Craenenbroeck and Lipták (to appear), since they show that in Russian and Hungarian it is operator movement that provides sluicing-like ellipsis and not topicalization, and these different kinds of movement differ with respect to resumption.

deletion potential that precipitates variation in ellipsis possibilities. This remains a topic for future research.

## 6 Summary

In this paper I have argued on the basis of evidence from dialectal variation in English VPE that ellipsis is licensed by overt non-A-movement, and I have shown that this proposal can be adequately extended to a number of other ellipsis constructions, allowing us to dispense with the technology of E-features and licensing heads. I have also shown that this proposal can be explained by more general conditions on movement and the syntax-phonology interface, and in doing so I have proposed that variation in the availability of ellipsis constructions is to be accounted for as variation in copy deletion.

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